/350 cont./

C 226

arm of the river; in waist-deep water they enter it with their bows and arrows and shoot them there, and any that escape the arrow the women go after with nets into which they fall." /Translated from the Spanish./

C 227

C [283]

Fig. 18. Landing net of cotton thread (puisa). Chiriguano. Prov.: Ibopeytí. (1/19 nat. size.)

C 226 watercourse, leaving the fish dry, and catch them by hand or
C [227] with a sieve (2). Iron fishhooks are equally popular: the

Ce 226

2. Nordenskiöld (2, pp. 184-185) describes a curious way of catching fish which is in use among the Chané of the Itiyuro River. They set branches in the water, which give shade and attract the fish. They also put there a calabash with some scraps of corn. The fish enter the calabash, whose neck is narrow. When several fish have gone in, the women close the orifice of the calabash with the hand and pull it up to the surface.

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Fig. 87. Chiriguano woman getting ready to spin. Cararutí. (Photo. A. M.)

286 The reed of our European looms is replaced here by an /Fig. 88 appears here/ interlacing of threads which grasp one thread of the warp, then the other, alternately.

286 413 The woof is passed through with the help of a shuttle whose motion back and forth is facilitated by a weaver's sword (iwirapé) which separates the warp threads. This latter instrument is used to tighten the cloth each time the woof has passed through. A [237] mammalian metatarsal bone sharpened to a point (Fig. 92) or a small pointed or spindle-shaped stick (Figs. 93 and 94) permits

/433 cont./

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Fig. 88. Chiriguano girls spinning. Masaví (Igüembé Valley). (Photo. A. M.)

286
413 moving the front /434/ warp threads back each time they have been crossed with the help of the reed. The woman who has just passed the woof through grasps this dagger firmly and with a sharp blow raises the threads of the warp after pulling on the reed. Difficult jobs, probably the execution of some /Fig. 89 appears here/ complicated figures, are accomplished with a wooden needle, which unfortunately I never saw used.

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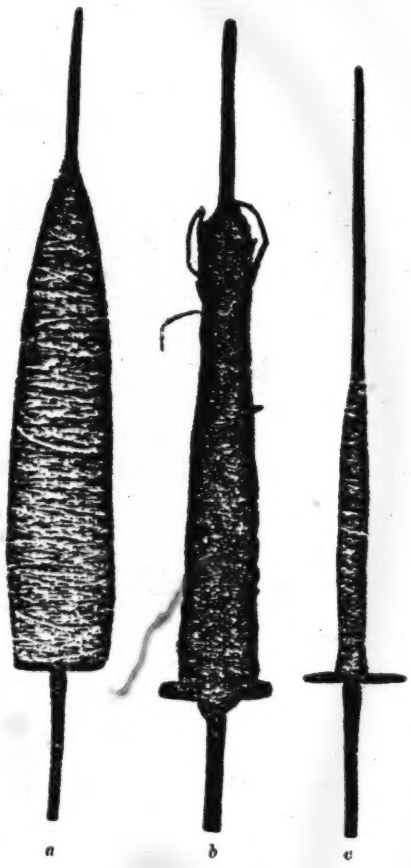

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[184]

Fig. 89. a, b, c. Chiriguano spindles of the bakaïri /Bacairi/ type. Prov.: a, Tasiti; b, Tintapaw; c, Tasiti (upper Pilcomayo). These spindles are provided with a groove in the upper part which allows the thread to be fastened. The whorls of a and b are of terra cotta, that of c of wood. (1/4 nat. size.)

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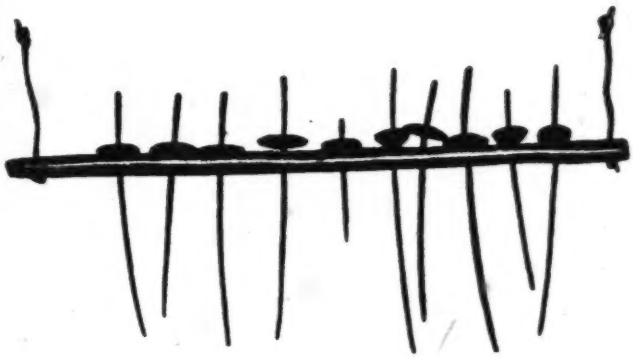

Fig. 90. Drawing indicating how the spindles are arranged inside a Chiriguano hut. They are threaded into the holes made along a bamboo which is hung against the walls of the habitation. (1/9 nat. size.)

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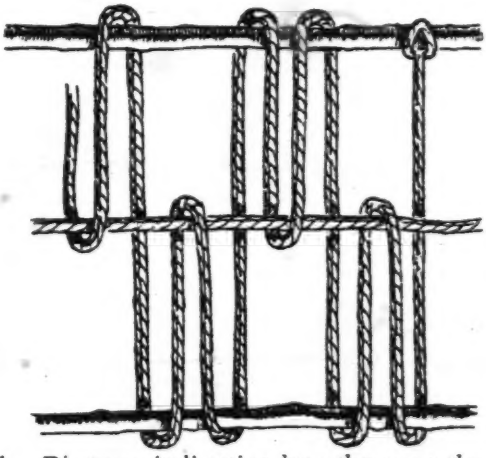

Fig. 91. Diagram indicating how the warp threads are arranged on a Chiriguano loom of the "Arawak type" (from Nordenskiöld).

/458 cont./

285 I was present at the making of a sieve at Carurutí in the
[824] Caipipendí valley. Here is what I noted about it: "The raw material is furnished by the leaves of the karandaí palm (Copernicia australis), which is cut into fine strips. The plaiting is done very simply: they form a square by crossing at right angles the elements of the woof and warp, following the rhythm of 1 (one element over, the other under, etc.) In order to slip in the woof elements, it suffices to raise each time all the strips

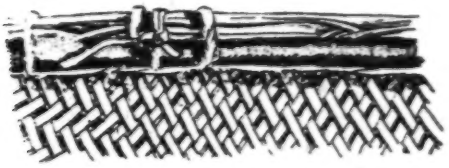

Fig. 115. Detail of the rim of the sieve of Plate LXXXIV, 2.

of the warp which have already been crossed by the woof. When the sieve is plaited, they choose a straight, flexible branch and carefully split it in two. Each of the two halves is bent into a circle so that one of the hoops can fit into the other. The unplaited elements of the warp and woof are inserted between the two hoops (see Fig. 115), then securely tied. Since the hoops have a diameter a little smaller than the width of the woven square, the result is that when it is fastened into the circle, it bulges out. All the ends which stick out are cut off."

285 The string used to attach the sieve to the hoops is made in the
283 following manner: "The bark of a tree (embira) is taken off in wide, long strips, in turn divided into finer lengths. They take two of these lengths, moisten them with saliva, and roll them on the right calf, each one separately, then the two together. When the cord must be of a certain length, they have to add new pieces. These splices must be made without changing the diameter of the cord and without any gaps. For that they are always careful

/458 cont./

285 to roll together two strands of unequal length. When one of them
283 has been rolled to the end, another is added. Any possibility of breaking is thus avoided. The movement of the hand is downward when they form a strand, and upward and downward when they roll the strands together to make the cord. The cord, at first fine, grows thicker, but slowly."

285 Plate LXXXII. Diameter: 43 centimeters. Provenance: Igüembé valley. /Plate LXXXII appears here./

/459/ This urumpé is a remarkable specimen from every point of view. The elements composing it cross according to a binary rhythm, that is, each

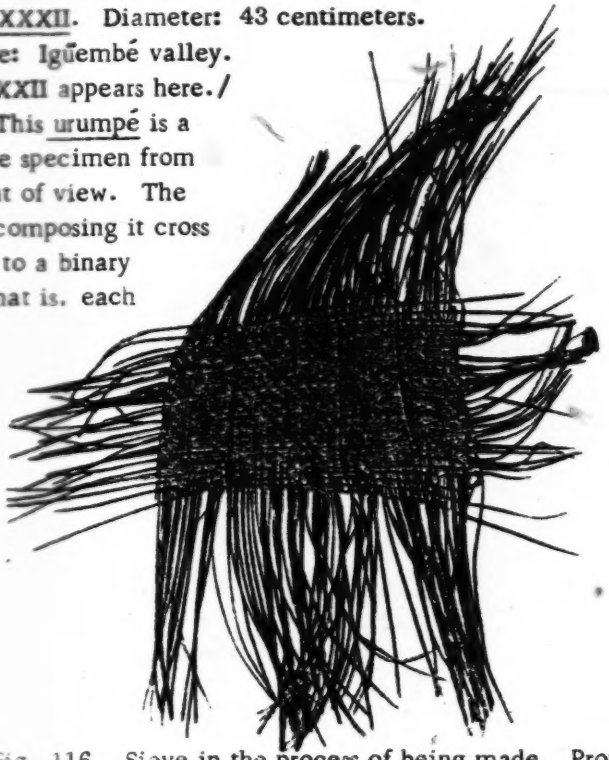

Fig. 116. Sieve in the process of being made. Prov.: Saladito (upper Pilcomayo). (About 1/4 nat. size.)

element of the woof passes under or over two elements of the warp. Darker stalks alternate by sections with lighter ones and form gray and light-colored bands which run parallel and cross at right angles.

It will be noticed that, having arrived at the vertical diameter, the elements of the woof, which until then had obeyed a binary rhythm, change it abruptly. The first time, the stalk crosses over; the second, it passes under three elements of the warp;

[TEXT Continues on P. 318]

2:Métraux E-5 (1929) 1948 SF10 Chiriguano SF10
Chane SF8

are based on a triangle surmounted by a scroll, which is multiplied in countless variations.

Women potters (pl. 41, *top, left,* and *bottom, left*) tempered the clay with crushed potsherds and built up their vases by coiling. They painted them with several kinds of ocher and with black obtained from rosin.

Spinning and weaving.—Among the *Chiriguano,* wool is more commonly used than cotton for textiles, but *Chané* fabrics are generally of cotton. The fibers are spun with a drop spindle weighted with a clay whorl (pl. 42, *center*). Although garments are in part Andean in shape, the loom remains of the vertical type. Formerly, indigo was the favorite native dye; today aniline dyes have entirely replaced it. The ornamentation of the fabrics is limited to a few stripes.

Netting.—Fishing nets and carrying nets are made by means of a wooden gage in a reef-knot technique.

Basketry.—Fans, round baskets with overlapping lids, and sieves are twilled with palm leaves in the best Guiana fashion, but wickerwork basketry is very common. No large baskets for carrying or storing food are made.

Gourds.—The painted, incised, or fire-engraved (fig. 61) gourds (*Lagenaria siceraria*) used as cups are, after pottery, the best expressions of *Chiriguano* art. The motifs are mainly geometrical, with occasional realistic representations.

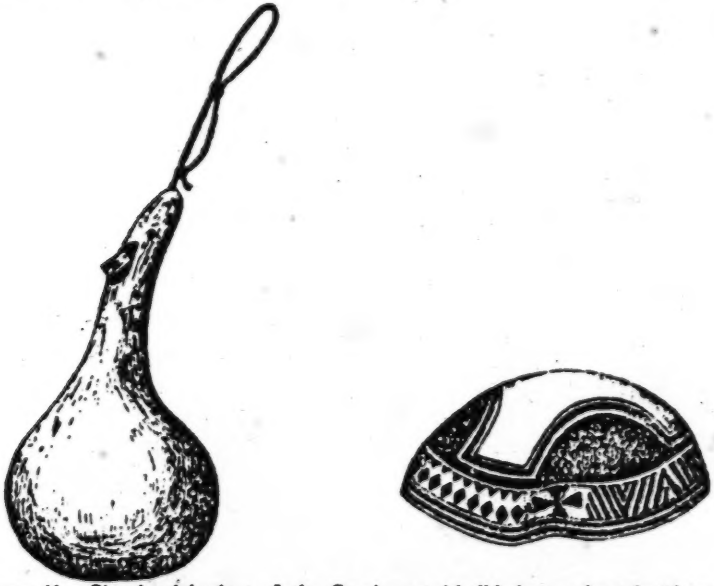

FIGURE 61.—*Chané* calabashes. *Left:* Specimen with lid (approximately ¼ actual size). *Right:* Pyrograved specimen (approximately ⅓ actual size). (Redrawn from Nordenskiöld, 1920, fig. 50 and Métraux, 1930 b, pl. 62.)

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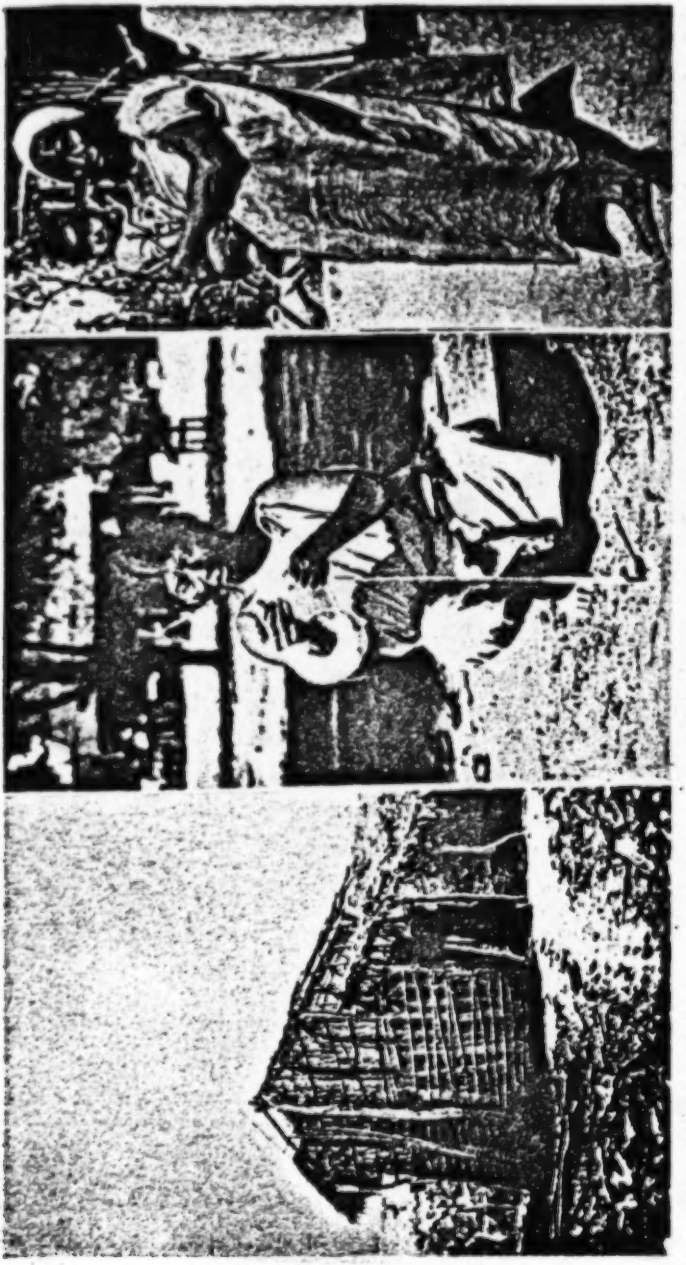

PLATE 42.—Chiriguano Indians. *Left:* Granary on piles. *Center:* Woman spinning. *Right:* Woman and child. (Courtesy Alfred Métraux.)

[End Plate 2]

/27 cont./

137 824 [262] which is purple when mature and opens into three sections when ripe. It has an insipid sweetness, but one which both whites and Chiriguano like. The color is a bright purple. It is abundant, and in certain years of scarcity it is a resource for human life in the months of February and March. In Chiriguano it is called "Ñacagüina." The caraparí is another cactus, taller than the preceding ones, which also has its congenial land. /28/ since it is not found everywhere. It is admirable for its tall, striated leaves or branches, ash-gray and armed with spines; its fruit is very pleasant and also sought [342] by foxes. The trunk is soft like that of all cacti; nevertheless [159] doors are made of this wood and are durable enough. The pulp of the trunk is used medicinally to cure liver ailments, etc. They say that it is even good for goiter. There is another species of cactus which grows to some 20 or 25 centimeters; it is round and thick, striated and armed with spines. [524] In Chiriguano it is called "Zipepe." The children, as we shall see, make wheels by cutting off its spines, and, making it roll, they use it as targets for their arrows. Finally, there is another which is trailing and long, covering the ground where it grows and making the place impenetrable. This has and [262] produces a very delicious fruit which is called "Tapiacaru" in Chiriguano.

TILANDSIA. -- This plant is known to the Chiriguano [342] by the name of "Caraguata guasu." Its special place is the hills, and among them it has some more congenial to it; it [283] grows well enough, and its leaves are extraordinarily broad [492] and long and ash-gray in color; in the middle there is a thick stalk which rises quite high and is good wood for house rafters; from the crushed leaves they make cord and from these are made first-rate halters for tying up animals in the rainy season. [286] The Toba and even the Chiriguano make a kind of net which [171] they call chipa or "añapoca," which is very useful, inasmuch [482] as the women can carry any weight in a bag of that kind; from [227] the same they make nets so as to be able to fish in the rivers, and these are pieces of work which would attract attention in any part of the Old World.

/28 cont./

139 There is another small caraguata which invades wide areas
824 of land, preventing any animal from entering there, because
[262] it has spines on the bottoms of the leaves. In times of scarcity
its root is food for the poor Chiriguano; the root contains a
little starch which has the taste of mandioca, but it requires
● [263] great effort to pull it up. The leaf of this tilandsia is also good
for making cord.

Finally, there is a third one which flourishes abundantly in trees and on the rocks of the hills, but which has no peculiar properties; it is large because of its leaves, which measure up to one meter in length. The plant is thick, the leaf fleshy, and it is used to decorate the streets with arches during processions. The aloe is similar to the second type of tilandsia, but aloe leaves are wide and thick, full of juice, while those of the tilandsia are slender, arched, and dry. The aloe is not abundant; only an occasional shrub or plant is found.

244 /29/ TOMATO. -- This plant which produces fruits so pleasant and useful to the culinary art flourishes exuberantly in these lands; the fruit from each plant is abundant and is produced the year round when some care is taken to protect the plant from the cold or from the light frosts which customarily
[237] fall in June and July. To do this it suffices to pile up dry cow
dung in two or three places in the tomato patch and set them
[197] afire. True tomato plants are also found in the woods, but it is presumed that some bird must have carried the seed to such places; the tomato is a plant which has been brought into the Chiriguano country, as is the case with the onion, the sweet potato, and the cabbage.

222 In the woods there is a kind of tomato in the wild state, which is somewhat similar in appearance and taste, but which is quite different from the true one; it is picked green and allowed to ripen in a room on top of a piece of wood; in a
[244] few days it turns red, which is a sign that it is ripe. The chili pepper also produces abundantly and with little care; it is a plant which lasts up to three years if care is taken to prune it, and the second and third years the fruits are very hot. Another kind of small, round chili pepper abounds in the woods and bears spontaneously; it is called arivivi by the whites and "quii rai" by the Chiriguano. It is hot, and some cure sickness.

/172 cont./

342 824 The hardest part is finished with the previous operation: a short rest is taken, and then the owner of the new building must obtain enough hollow cane, engaging for this purpose Indians who have horses. But if the cane is very far away and has owners to boot, he gathers long sticks of astringent acacia or sebil and puts them horizontally every 15 centimeters on top of the rafters with the same above-mentioned lianas. Some [283] people, to tie the cane or sticks, use thin cords made from cowhide, but this, in addition to being more expensive, is less durable than bejuco (1).

[137] [178] [423]

1. Before the whites settled in Chiriguano country, hollow cane was abundant and had no owners; at the present time it cannot be found, and, if there is any, it is in private hands and must be bought.

Generally, before the walls are begun the house is covered with capíi, red straw, or, should this not be available, with capiáncua, straw for harnesses of beasts of burden, which is of inferior quality and very soon frays to pieces with the rain, sun, and strong winds, while the capíi may last for more than ten years.

[496] If it can be obtained by staying for a few days in a place where it is plentiful, he pulls it up there and reduces it to rather large handfuls: the gathering is done in several days, engaging Indians who own horses. When the material is in the town, he rests for a few days or weeks; he informs or invites those who wish to take part, in particular those who are closest to him by [354] kinship or friendship. These then go about tying the capíi between two horizontal canes toward the side of the roots, forming long, narrow lines, and when they are so placed, they attach them horizontally, beginning at the bottom and working /173/ upward or toward the ridgepole, where they leave a large vent to let out the eternal smoke of their inextinguishable fires (1).

1. Now the red straw is disappearing almost completely: the destruction of this necessary

/222/

raised to the ceiling. They leave her there for a period of four days in strict fasting and, of course, without her opening her mouth to speak to anybody, not even to ask for necessary things, because if she should talk or ask for anything, misfortune would appear at once.

At the end of this first test, which the maiden has scarcely felt, they lower her on the fifth day, wash her head with potash of Ñetira, and shave off the adolescent girl's hair. Meanwhile in a corner of the house far from the door, they have prepared a wall like a corner piece, made out of slender sticks a meter and 50 centimeters high more or less. Wrapped in her tipoi or clean clothing, the unfortunate girl goes there, into her pen, and begins her strict fast, which they call Yicuaco, or hiding (1).

1. This rigorous way of life does not seem at all strange to the maidens, because before it comes their mothers have prepared them for it, and they believe in everything with blind faith.

The girl remains in her enclosure for a week without doing anything, with face to the wall in order not to see or talk to anybody. Her usual fare is boiled maize, Atiruru. Sometimes she also eats meat if there is any, but in very small quantities. She neither tastes nor desires other foods. Were she to eat parched maize, she would not be good at feeding her children when she has them, because her breasts would be dry all her life. Her usual beverage should be natural clear water. Were she to drink chicha, she would be barren, because it contains alcohol and acridness, which would stop the effects of conception during her marriage.

When the week is over, the fasting continues, but less harshly: her parents have obtained cotton or wool, have prepared the spindle and wheel, with the little potsherd in which they put a few ashes or sand so that the spindle will turn more easily. The mother hands over all this to her daughter, who begins to work and learns that she has been born for work.

/223 cont./

881 868 867 283 The young girl receives her mother's injunctions without uttering a word, without making any comment, respects the advice and admonishments in the same silence and more that that of a mute, because she hears and keeps quiet without making any movement at all, without raising her eyes or moving her head. She begins her work as soon as her mother withdraws: she combs the wool or cotton with her fingers, cleans it of /224/ whatever dirt it may contain, and begins to spin, a duty learned from early childhood (1).

[885]

1. The maiden who fasts can only work in the place where she is enclosed: therefore she cannot help her mother even to clean the house.

881 868 867 284 When her mother sees that she has enough to make some small article, she directs the weaving, and the first thing that is made is the Hapicuata for her father and then anothel for her mother, with which they are very happy, and even their friends congratulate them on the work of the daughter, for whom they, of course, profess sympathy and respect as a sacred person, because she is in the period of fasting or hiding, since both things are done when these maidens reach puberty (2).

2. The same word, Yicuaca, is used for the fasts ordered by the Church for neophytes. There is no other word in the language.

881 885 During the first month or first moon, Yai, the seclusion or hiding is the most rigorous, because the symptoms of puberty should manifest themselves two times in order that they may be considered true ones, that is to say, the Chiriguano do not believe that a woman is ready for marriage until after it has been ascertained that her menstruation is regular. This, which for women is their relief and their health, is called Hugñi in adults, but for pubescent girls the first as well as the second is called, as I have already said, Yimundía.

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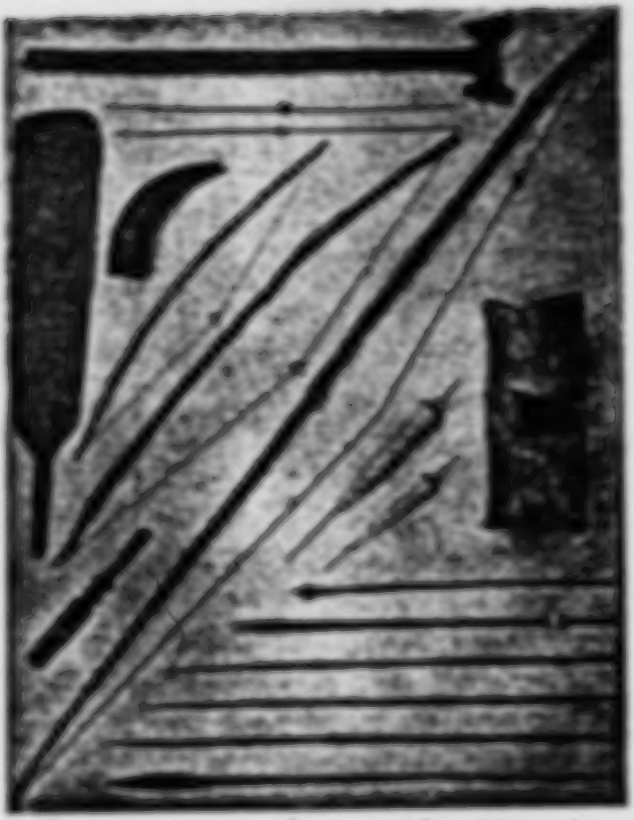

Bonus antonym etc. /see p.362 for additional extensions/.

4: Nino--371 M-3 (1890-1911) 1912 SF10 Chiriguano SF10

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Offensive War and Weapons

643 When a tribe was preparing to attack another, if it foresaw
701 that it would last longer than usual, and the cacique judged that
705 more preparations were required, in his position as supreme chief or captain general he would commission subalterns called Queremba, experts, to inspect all the armament available, and if the report of these chiefs was not satisfactory, a general order was given to make up and repair all the deficiencies as quickly as possible.

411 The bows and arrows were made in the public plaza or out-
824 side each house: the wood which was to serve for bows was different from that for arrows. War bows measured /275/ a meter
• [283] and a half more or less, and to shoot one they used a twisted cord made of pygmy-deer hide, which was both light and strong. The wood that they use even today for hunting bows is called Igüirapitiragua.

The arrows are made of different kinds of wood, but the most common are Ovei, guayacamillo /a kind of guaicum/, Yaguasü, tola, and Igüirane, smelly wood. This last is very poisonous, and the tribe that uses it must be a very bad enemy of his opponent, because whoever is wounded with these arrows will recover only with difficulty, and the wound is a continual suppuration of illness, which slowly consumes him, almost without any hope of his being able to be helped and to enjoy life once more with his companions.

Every arrow ends in a point, and on both sides it has its edges the opposite way so that when it enters the flesh it is difficult to remove, and one who does not know how to remove it can produce a greater wound than the one the arrow made when it entered.
[283] The arrow is inserted into a little piece of hollow cane, one
[239] meter long, where it is securely attached with string made of toborochi bark, and the string is covered with a little bit of wax (1).

1. At the end of the cane, with the same string and wax, many attach a feather of a falcon or of a carcancho, not for decoration, but so that the shot may be more accurate. The feathers of these birds are more resistant than others.

4: Nino--382 M-3 (1893-1911) 1912 SF10 Chiriguano SF10

/283/

Explanation of the Preceding Illustration /see p. 368/

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1. Wooden spade for work.
2. Spade handle.
3. Bull's horn for blowing.
4. Implement for stirring food.
5, 6. Chiriguano spindles.
7. Chair or seat with two spaces for children.
8. A bow for adults.
9. Arrow with iron point.
10, 11, 12. Arrows with wooden point.
13. Bow for young people.
14. Arrow with two points for hunting and fishing.
15. "Songo," or arrow with rounded point for hunting small birds.
16. Bow for boys.
17, 18. Arrows for boys.

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Chapter Thirteen

Illnesses, Remedies, Death, and Mourning

Introduction

One moment of reflection suffices for a man to understand that there is no true happiness on earth; he who can glory in being happy in this world finds many sorrows: unsatisfied desires, unexecuted orders, unfinished projects. The careless execution of injunctions constitutes thorns for the heart of the man who could call himself blessed. He would like everything to go along as he desires, and when this does not happen he suffers, and if he does not express his suffering he suffers much more (1).

1. It is a great relief for a man to be able to communicate his sufferings to a sincere friend, but it is difficult to find such, because he who has a friend has a treasure, and the treasure is a rare thing.

5:Nordenskiöld E-5,4(1908-1909, 1913) 1920
SF10 Chiriguano SF10
Chane SF8
South American Indians 53

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61. The Apaporis Indians, WHIFFEN P. 47.
71. Sipibo, STEINEN (5) P. 75.
94. Chiquitos, *Litterae Societatis Jesu* 1594—1595. P. 754; BURGOS P. 343. The men have hammocks, the women platform beds. This implies that fixed bedstead here are more original than hammocks.
95. Chibcha, OVIEDO T. 2. P. 407.
IV. Guaná (Arawaks), AZARA (1) T. 2, P. 89.
3 H. Indians on the coast of Ecuador, BENZONI P. 245.
4 H. Camacans, MARTIUS (1) P. 345.
6 V. Guaná, COMINGES P. 178.
7 V. Indians of Chuquimayo, PALOMINO P. XLIX. He made his journey in 1549.
8 M. Indians (Chamas), Sierra de Merida. SALAS P. 262.
9 P. Xevero, CHANTRE y HERRERA P. 143. Mainas, SAABEDRA P. CXLIV. »duermen en barbacoas ó cañizos con toldos.»

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In the regions I visited it was only the Siriono, Huanyam and Huari who had hammocks of palm-fibre or bast. The other tribes who employ this form of bed have hammocks of cotton. The Chané hammocks are of cotton or caraguata[1])[2]). The Chiriguano have hammocks of cotton, occasionally of wool. IM THURN and K. V. D. STEINEN had already pointed out that, while cotton hammocks appear to be a Carib culture-element, the palm-fibre hammock is of Arawak origin. PATER SCHMIDT then thoroughly investigated the distribution of hammocks of various materials, confirming the theories of IM THURN and K. V. D. STEINEN and shewing, moreover, that the Guarani peoples, as a rule, have cotton hammocks.

[1]) In net-technique.

[2]) Annua de la Compañia de Jesus. P. CIV The author speaks of two kind of hammocks from these Indians. Probably one of them were of Caraguatá. I am not quiet sure if he speaks of the Chané or the Chiriguano or of both »hincan muy grandes palos y de ellos cuelgan sus hamacas, que son unas mantas grandes ó tejidos de algodon ó hechas de red.»

5tNordenskiöld E-5,4 (1908-1909, 1913) 1920
SF10 Chiriguano SF10
Chane SF8

RUTH HAEBLER, a pupil of MAX SCHMIDT, has endeavoured to shew that this is not correct. After examining a number of hammocks in German museums, she arrived at the conclusion that, in the majority of these, both palm-fibre and cotton had been used — palmfibre for the warp and cotton for the woof — and that the notion that the Arawaks have hammocks of palm-fibre only, while Caribs have only cotton hammocks, is wrong. For the rest, hammocks of mixed materials are also mentioned by PATER SCHMIDT, who thus devoted attention to this matter when he was investigating hammocks. ROTH, too, mentions from Guiana hammocks of bast with a woof of cotton. The fact really is that all the hammocks described as having a bast warp and cotton woof are from the Upper Xingú or from Guiana tracts, where there dwell Arawaks, Caribs and Tupi. If we study the appended map and table, which are based on very extensive material, we shall find that, within an immense region about the Amazon, the Indians use hammocks of palm-fibre exclusively, and that in the rest of S. America it is more especially the least civilized tribes, e. g. Siriono, Huari, Waika and others, who use bast or palm-fibre hammocks exclusively. On the coast of Brazil, the more civilized Tupi had cotton hammocks, while the less civilized tribes used palm-fibre. I would consequently account for the distribution of hammocks of different materials in the following way: — Originally the Indians in the whole of tropical S. America had hammocks of palm-fibre or bast exclusively. When the art of cultivating cotton spread from the west, many tribes began to use cotton hammocks or, in some districts, hammocks of palm-fibre with a cotton woof. Where cotton-growing remained unknown, or was inconsiderable, as among the Arawaks of N W Brazil, hammocks made entirely of palm-fibre were still used.

Which tribes spread the knowledge of cotton growing? Certainly not the Arawaks, who within large tracts

5:Nordenskiöld E-5,4 (1908-1909, 1913) 1920
SF10 Chiriguano SF10
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*171
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do not even spin. It must, above all, have been the Tupi - Guarani. They are known for their manufacture of cotton hammocks. The Omagua who dwell (have dwelt?) in a tract where they and the Cocama are the only Tupi Indians, use hammocks both of palm-fibre and of cotton. All the neighbouring tribes have nothing but palm-fibre hammocks. Some Tupi at the Upper Xingú use palm-fibre hammocks with a woof of cotton. RUTH HAEBLER mentions two hammocks of bast from the Cainguá. Otherwise, the Tupi tribes use cotton hammocks, as has been pointed out by PATER SCHMIDT. The Caribs, too, have undoubtedly contributed to the spread of cotton-growing and the use of cotton hammocks, for it is very evident that in Guiana especially, they have used, and still use, cotton in their hammocks far more than the Arawaks. The distribution of cotton hammocks in S. America cannot be properly understood except in connection with the general history of the cultivation of cotton. It is highly probable that it was from the western area of civilization in S. America that the knowledge of cotton-growing spread over a considerable part of the continent. It is very likely that, in post-Columbian times, the practice of growing cotton has spread to a good many tribes who formerly were ignorant of it. We must remember that cotton has been grown at such mission-stations as in Mojos on a very large scale.

C
Ce
[174]

C
Ce
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*171

It must also be remembered that the history of the cultivation of cotton is of especial interest, because the cotton bush is one of the few cultivated plants that in pre-Columbian time were common to both the Old and New World. Consequently, it would be very interesting if we could prove that cotton was first used in S. America within the old culture areas, and there only after the Indians had reached a comparatively high state of civilization.

C
Ce
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*171
[554]

It is not quite right to say that the hammock was not used within the culture-area of the west. It was used — not as a bed, but as a litter for persons of rank. This is

S:Nordenskiöld I-5,4 (1908-1909, 1913) 1920
SF10 Chiriguano SF10
Chane SF8
South American Indians 53
17
C
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102
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352
*171
S
102
352

Map 3. Distribution of the hammock.

Hammock used as a bed.

● = of cotton, □ = of palmfibres or bast, ■ = warp of cotton, woof of bast,
■ = warp of palmfibres, woof of cotton, ■ = either of cotton, palmfibres or bast

▲ = *Hammock used as a litter.*

SiNordamerikBd E-5,4(1900-1909, 1913) 1920
SF10 Chiriguano SF10
Chaco SF8
South American Indians S3
[P. 18]
C
Ce
283
352
*171
S
352
102

Table 3.

The distribution of the hammock.
Map. 3.

Number on the map.	Names of the tribes		Cotton	Warp of cotton. Woof of bast	Warp of palmfibres Woof of cotton	Palmfibres or bast		
4	Chiriguano	Southern Bolivia	+	—	—	—?	Tupi	Also of Wool. R. M. E. 1056.
5	Chané	»	R. M. P. 126	—	—		Arawak	
8	Lengua	El Gran Chaco	—	—	—	+		PATER SCHMIDT P. 1069.
11	Chamacoco	»	—	—	—	+		»
20	Paressi		+	—	—	+	Arawak	RUTH HARBLER P. 14.
21	Cainguá	Misiones	+1)	—	—	+	Tupi	» »
23	Churápa	Bolivia	G. M. Tj. 78	—	—	—		R. M. Tj. 72.
25	Mojo	»	+	—	—	—	Arawak	Private Collection.
28	Bakairi	Matto Grosso	+	—	+	—	Carib	RUTH HARBLER P. 14.
»	Kustenau	»	+	—	+	—	Arawak	» »
»	Auetö	»	—	—	+	—	Tupi	» »
»	Kamayura	»	—	—	+	—	»	» »
»	Mehinakú	»	—	—	+	—	Arawak	» »
»	Trumai	»	—	—	+	—		» »
31	Ojana, Trio	Guiana	+	—	—	+	Carib	GOEJE (1) P. 21.
35	Chimila	Colombia	G.M.16.3.30	—	—	—		BOLINDER (4) P. 51.
36	Ijca and Köggaba	»	—	—		G.M.16.3.783		»
38	Tupinambá, Tupinikin, Carios	Coast of Brazil	+	—	—	G.M. 15.3.58 —	Tupi	PIGAFETTA P. 8, STADEN T. 2, P. 8; d'ABBEVILLE P. 203; PATER SCHMIDT P. 1004
39	Goljiro	Colombia	—	—	—	+	Arawak	PATER SCHMIDT P. 1070.
40	Guarayú (Guarayos)	Bolivia	G. M. G. 100	—	—	—	Tupi	
41	Guarayú (Pauserna)	Matto Grosso	G.M15.1.844	—	—	—	»	
42	Caripuna	Rio Madeira	—	—	—	+		PATER SCHMIDT P. 1068.
43	Huanyam	Rio Guaporé	—	GM.13.1.601	—	G. M. 13.1. 600		
47	Macusi	Guiana	+		+		Carib	THURN. Orally communicated. PATER SCHMIDT P. 1067; FARABEE, P. 29.

C Ce 283 ● 352 *141 S 192 352

6:Nordamerika Bd E-5,4 (1908-1909, 1913) 1920 SF10 Chiriguano SF10 Chane SF8 South American Indians 53 [p.19]

»	Patamona	»	G.M. 12.18-46, 121-122	–	–	» »	Thulin	
6	Arecuna	»	+	—	—	—	»	
»	Wapisiana	»	+	—	—	—	Arawak	RUTH HAEBLER P. 14.[1])
48	Hianacoto	N. W. Brazil	—	—	—	+	Carib	» »
	Sisi	»	—	—	—	+	Arawak	» »
	Uaupé	»	—	—	—	+	»	» »
	Baré	»	—	—	—	+	Arawak	PATER SCHMIDT P. 1068.
	Kobéua	»	—	—	—	+	»	» »
51	Siriono	Bolivia	—	—	—	G.M.8. 3—4		
55	True Carib	Guiana	+	—	—	—	Carib	MOCQUET, P. 116,, GRILLET et BECHAMEL P. 165[2])
56	Mundrucú	Rio Tapajos	+	—	—	—	Tupi	PATER SCHMIDT P. 1069.
60	Apiacá	»	+	—	—	—	»	» »
61	Uitoto, Boro, Karahone[4]) etc.	Rio Putumayo and Rio Yapurá	—	—	—	+		PATER SCHMIDT P. 1069; WHIFFEN P. 97.
62	Chacobo	Bolivia	R.M.Ch. 180	—	—	—		
63	Yamiaca	Peru	R. M. 05. 16. 430	—	—	—		
64	Huari	Matto Grosso	—	—	—	G.M.15.1.416		
65	Baure	Bolivia	+	—	—	—	Arawak	
68	Omagua	Upper Amazonas	+	—	—	+	Tupi	PATER SCHMIDT P. 1069.
69	Ipurina	Rio Purus	—	—	—	+	Arawak	RUTH HAEBLER P. 14; Also of bark. PATER SCHMIDT P. 1070.
75	Augalté	El Gran Chaco	—	—	—	+		COMINGES P. 124.
77	Tapirapé	Near Rio Araguaya	+?	—	—	—	Tupi	PATER SCHMIDT P. 1069.
79	Yekuaná	Rio Merevari	+	—	—	—	Carib	RUTH HAEBLER. P. 14.
90	Acipoya, Curuahé	Between R. Xingú and Rio Tapajos	+	—	—	—	Tupi	PATER SCHMIDT P. 1069.
94	Chiquitos	Bolivia	+	—	—	—		My own observations.
97	Puri	Near Coast of Brazil	—	—	—	+		PATER SCHMIDT P. 1068.
99	Cumanagoto	Coast of Venezuela	+	—	—	—	Carib	PATER SCHMIDT P. 1069 (After RUIZ BLANCO), BENZONI P. 10.
4A	Tauaré	Upper Rio Purus	+	—	—	—		PATER SCHMIDT P. 1069.
7A	Achagua	Venezuela	-	—	—	+	Arawak	» P. 1068.

[1]) »Algunos pocos tienen pequeñas y estrechas hamacas de algodon que tejen, las que usan mas bien de asientos ó cunas para las criaturas que de camas.» AMBROSETTI (7) P. 607.

[2]) »Very small hammocks are made of one piece of bark tied at the ends with a rope. FARABEE, P. 20.

[3]) »Tous les Hamacs . . . qui se font depuis la Riviere des Amazones jusques à Orenoc sont de cotton». See also H. TEN KATE. P. 106.

[4]) Carib.

C Ce 283 352 *171 S 102 352

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Chase SF8
[p.20]
South American Indians 53

Table 3.

The distribution of the hammock

Map 3.

Number on the map.	Names of the tribes.		Cotton	Warp of cotton. Woof of bast.	Warp of palmfibres Woof of cotton.	Palmfibres or bast.		
1B	Ticuna	Upper Amazonas	—	—	—	+		Pater Schmidt P. 1068.
7C	Itonama	Bolivia	+	—	—	—		Pater Schmidt; My own observations.
6E	Indians of	S:a Marta	+	—	—	—		Oviedo T. 2, P. 354.
1H	Wayanasses	Ilha Grande, South of Rio de Janeiro	—	—	—	+		Knivet P. 1228.
2H	Indians	Rio Amazonas	—	—	—	+		(Texeira) P. 445.
6H	Pacaguara	Bolivia	—	—	—	+		Armentia (2) P. 125.
7H	Indians	Upper Rio Opon	+	—	—	—		Aguado (1) T. 1, P. 212.
8H	»	Northern Venezuela	+	—	—	—		Simon (1) P. 583.
4L	Caxinauá	Rio Yuruá	+	—	—	—		Ruth Haebler P. 14, Capistrano de Abreu P. 35.
6M	Toromona	Bolivia	+	—	—	—		Ruth Haebler. P. 14.
7M	Guashiguas	Venezuela	+	—	—	—		Aguado (2) T. 1. P. 242.
9M	Schirianá	Rio Uraricuera	—	—	+	—		Koch-Grünberg (4) T. 1. P. 172.
1N	Waika	Rio Uraricuera	—	—	—	+		Koch-Grünberg (4) P. 201.
2N	Pauschiána	Near Rio Branco	—	—	—	+	Arawak?	Koch-Grünberg (4) T. 1. P. 14.
3N	Uainuma	Rio Yapurá	—	—	—	+	Carib	Pater Schmidt P. 1069.
4N	Yanaperi	Near Rio Branco	—	—	—	+	Carib	Pater Schmidt P. 1069.
5N	Indians	Rio Mapuera	—	—	—	+		O. Coudreau P. 89.
6N	Indians	Near Cartagena	+	—	—	—		Simon (2) T. 4. P. 26.
5P	Xarayes	Lago Xarayes	+	—	—	—		Nuñez Cabeza de Vaca T. 1. P. 300.
7P	Oyampi	French Guiana	+	—	—	—	Tupi	Crevaux. P. 213;
1S	Mura	Rio Madeira	—	—	—	+		Pater Schmidt P. 1068.
2S	Maĥacari	Eastern Brazil	—	—	—	+		» »
3S	Maopityan	Southern Guiana	—	—	—	+	Carib	» P. 1069.
1S	Miraña	Upper Amazonas	—	—	—	+		» P. 1068.

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SF10 Chirigano SF10
Chane SF8

[p.21]

South American Indians 53

5S Pimenteira and

	Kariri	Eastern Brazil	+	—	—	+		Pater Schmidt P. 1069.
78	Arawaks	Coast of Guiana	—	—	+	+	Arawak	» P. 1068, Roth (3) P. 35. Grillet et Bechamel P. 172.[1])
V3	Caripou	Yapoco, Guiana	—	—	—	+		Mocquet P. 81.
V8	Peba	Upper Amazonas	—	—	—	+		Pater Schmidt P. 1068.
IV	Guaná (Arawaks)	Rio Paraguay	—	—	—	+	Arawak	» P. 1069.
6V	Guaná	El Gran Chaco	+	—	—	—		Comings P. 236.
XI	Yamamadi	Rio Purus	—	—	—	+	Arawak	Ruth Harbler P. 14. Also of bark. Pater Schmidt P. 1070.
X4	Payaguá	Rio Paraguay	—	—	—	+		Pater Schmidt P. 1069.
8X	Warrau	Delta of Orinoco	+	—	—	G. M. 12. 1. 502		Plassard P. 591.
X	Yuruna	Rio Xingú	+	—	—	—	Tupi	Pater Schmidt P. 1069.
47	Porokoto		+	—	—	—	Carib	» »
28	Asurinikim	Upper Xingú	+	—	—	—		» »
18	Incas	Peru	?	—	—	—		Pizarro P. 379[2]) Xerez P. 89.[4])
100	Arebato	Rio Caura	+	—	—	—	Arawak	Pater Schmidt P. 1069.
101	Gamacan-Mongoya	Coast of Brazil	+	—	—	—		» »
Not on the map	Chámas[3])	Bolivia	G. M. 15. 1. 1367	—	—	—		
»	Uašmiri		—	—	—	+		Pater Schmidt P. 1069.
102	Guayupe	Llanos de Venezuela	+	—	—	+		Aguado (1) T. 1. P. 791.
103	Indians, Ancerma	Columbia	—	—	—	—		Cieza de Leon (1) P. 64, To carry the chiefs.
Not on the map	Yaro (Chana)	Rio Uruguay	—	—	—	—		Sepp P. 51.
8N	Zaparo	Ecuador	—	—	—	+		Castrucci P. 34. Karsten.

[1]) »Les Aroüagues les Araotes, et la pluspart des autres Nations, qui sont vers la riviere d'Orenoque font leurs lits de fil de Pite.» See also H. ten Kate P. 106.

[2]) Among these Indians I found only one small hammock that they have got from some other tribe. The Cháma sleep on the floor with blankets of bark-cloth.

[3]) Pedro Pizarro says speaking of the principal woman: »Traianlas en hombros, unas en andas, otras en hamacas. Hamacas son unas mantas atadas en unas cañas muy gruesas de grosor de un brazo y mas, por muy buen arte puestas, y allí iban echadas las señoras con cobertores encima.»

[4]) »Trainle muchos indios sobre los hombros en alto y tras desta venian otras dos literas y dos hamacas.»

[5]) Also many other tribes in Mainas had hammocks of palmfibres Chantre y Herrera P. 67.

5:Nordenskiöld E-8½(1908-1909, 1913) 1920
SF10 Chiriguano SF10
Chané SF8

for arrow shafts has been completely destroyed by cattle along the Rio Parapiti. Formerly the Chané made the shafts for their arrows of »chuchio».

The arrow points are made of hard wood and sometimes of iron. Arrows with several tips are used for fishing and sometimes also for shooting birds. Arrow-tips made of cactus spikes are used by some Chiriguano for fishing. Some characteristic types of arrows are depicted here (fig. 6). Some arrows are feathered to guide the flight. The feathers are fixed in the way that MEYER calls »Peruvian cemented feathering». The feathers are quite small as on Chaco arrows generally. Arrows with thickened heads (bird arrows) are very common. Some of them have the shape we see depicted here (fig. 6 E). This type does not occur among any of the other tribes I got to know during my travels, but they are common among several peoples living in the east, e. g. the Cainguá, Guató, and Bororó, and in the northern part of S. America, among the Trio, Guahibo and others. They have most likely been introduced here by the Chiriguano. It is not probable that they have come from the Arawaks for, as a rule, they do not use blunt bird-arrows. In Part I I have published a map (No. 3) showing the distribution of the bird-arrow in S. America. Later on I will deal with arrows particularly used for fishing. The Chiriguano and Chané sometimes use a special kind of bast to bind round the arrow where the point is inserted in the shaft. The same kind of bast is not met with among the Choroti and Ashluslay or among the other Chaco tribes I have got to know. It occurs, however, among the Cainguá.

In part I I have already published a map showing the distribution of the sling in S. America. I have nothing to add to this which cannot be seen in the subjoined drawings (fig. 7).

The pellet-bow is rather common among the Chiriguano and also among the Chané. It is chiefly used by boys and youths. I wish here to make a few additions to what I have said about the pellet-bow in Part I.

8(Nordamerika)Bd E-4,4(1908-1909, 1913) 1920
SP10 Chiriguano SP10
Chaco SP8

XXIII.

Various kinds of handicraft besides pottery.

Knitting-technique.

C Ce 286 Respecting the occurrence of different kinds of knitting technique among the Chiriguano and Chané I have little to add beyond what was mentioned in the English edition of Part I of this work.

C Ce 286 352 ↑171 The hammock-netting is the usual technique which gives the so-called barred hammocks (See Part I) which are widely distributed in all S. America north of El Gran Chaco. They are found almost universally where hammocks occur. Occasionally one sees among the Chiriguano and Chané bags knitted in the technique which in Part I I denoted by No 5. These bags are never made by themselves, but are obtained from the Mataco, Tapiete, or some other Chaco tribe. During my archaeological excavations at Igüembe I found a piece of pottery with impressions of knitting evidently done in this technique.

C Ce 284 286 283 The carrying-nets and most dip-nets of the Chiriguano and Chané are made with reef-knots. The Chiriguano have also dip-nets knitted with sheet-knots. For carrying-nets and dip-nets they Chiriguano and Chané generally use caraguatá bast. »Yuchan« is seldom used[1])

Spinning.

C Ce 283 Regarding the spinning of the Chiriguano and Chané there is little to add beyond what I mentioned in Part I.

[1]) *Chevisia insignes.*

Smithsonian E-8,f (1908-1909, 1912) 1920
SF10 Chiriguano SF10 ●
Chané SF8

C
Ce
283 ●

Their spindles are of the Bakairi type with a knob. (See Part. I map 35). The spindle discs are sometimes of stone. The Chané at Rio Parapiti sometimes use when spinning a small earthen plate made for the purpose, on which the spindle is whirled.

The preparing of leather.

C
Ce
281
177
171*

The Chorotí and Ashluslay have no knowledge of tanning, where as the Chiriguano, Chané, Toba and Tapiete have. They use the bark of Piptadenia and other trees.

These Indians have, in all likelihood, learnt the art of tanning from the Whites who, in these tracts, are more skilled in leatherwork than in any other trade. Tanning seems to be unknown to all Indians in S. America who are either untouched or but slightly influenced by White civilization.

The carving and ornamentation of calabashes.

C
Ce
415
322

The Chiriguano Indians, as well as the Chané make very great use of calabashes. They are used as receptacles for water and maize-beer; as boxes, humming-tops, bowls and, above all, as drinking-vessels. At festivals maize-beer is handed round in elaborately ornamented calabashes.

Sometimes the calabashes are provided with lids. These are so made that lid and box are of the same fruit. Now and then star-shaped lids occurs. Lids with a shutting arrangement of the type shown in Fig. 50 A are characteristic of these Indians.

I published in Part I a map showing the distribution of calabashes with lids. From this map we see that these are probably a culture-element which the Indians east of the Andes received from the western area of civilization.

I scarcely think, at any rate, that the star-shaped lids can be cut out so as to fit tight on the box, save with a metal tool. It could hardly be done with a stone or bone implement.

8: Schmidt--92 E-5 (1935) 1938 SF10 Chiriguano SF10
Chane SF8

C
Ce /37 cont./
524
177 These Indians received two games of chance from the whites, the game of dice, which they call by the Spanish name "daro," and the game with a cow's leg bone, which they call "taba."

Agriculture

C
Ce I have already explained in the chapter on food and drink
241 that the cultivation of maize as an agricultural product is common, and among the Chané of the Parapití the cultivation of the sweet potato. Mandioca is only cultivated rarely and has no importance in the economy of these Indians. Various species of beans are planted, also one species of cactus, some gourds which have edible fruits, and also a little tobacco.
Ce In addition to these edible or stimulating native plants that are
241 cultivated, there are some others received from the whites, but
177 these have little importance in the economy of these Indians. According to Nordenskiöld (171), they are the following: sugar

171. Nord. 2, pp. 23 and 24.

cane, peanuts, watermelon, muskmelon, figs, oranges and millet, and Métraux also mentions the pepper among them (172).

172. Métraux 1, pp. 338 and 339.

C
Ce In addition to these edible or stimulating plants, there are
241 cultivated various species of gourds whose fruits are not edible
[415] but are used to make containers, cotton for making thread,
[283] urucú for obtaining red dye, and, among the Indians of the
[386] Parapití, also a species of cane, Harundo Donax /Arundo donax/, which grows wild in great quantity on the banks of the Pilcomayo, but not on those of the Parapití River.

C 411 /42 cont./
drawings by v. Rosen and v. Nordenskiöld (194). This club is

C 411 284 194. V. Rosen, op. cit., Fig. 212. Nord. 2. Fig. 6. D and E.

fastened directly on the inside of the upper part of the shaft. The shaft of the larger arrow is made of the same cane as that of the other arrows, and that of the smaller arrow is light wood. The binding on the upper part and also on the lower part of C [239] the shaft of the longer arrow consists of cotton thread secured with wax. The two arrows have feathering and have the same groove at the bottom end of the shaft. Several specimens of Chiriguano bird-hunting arrows whose clubs show different forms are shown in drawings by Métraux (195).

195. Métraux I. Plates X-XI.

C Q 411 174 [283] The special form of the club of the arrows for shooting birds (cf. Fig. 37e) and the special method of binding the shaft with a cord of tree bark and the length which these arrows formerly had lead us to the conclusion that this type of arrow, equally common today among the Chiriguano and Chané, is the ancient form of arrow that the Chiriguano brought from their native soil to the west. I have already mentioned that the Chiriguano and Chané bows and arrows were formerly much longer. But we can also assume that these implements of the hunt and weapons of war, in accordance with their greater importance, were formerly better made than they are today.

E Q 411 524 According to Nordenskiöld, only rarely does the <u>cobaque</u>, the bow for shooting balls, appear among the Chiriguano and Chané, and it is only used by youths and boys (196).

196. Nord. 2, p. 26.

R. Schmidt--126 E-4 (1901) 1928 EP10 Chiriguano EP.1
Ehrlich 578
28:20

C 264 415

/33 cont./

described by him there is one which is 93 cm. high and has an aperture at the top 70 cm. in diameter. Another is 110 cm. high and its maximum diameter measures 85 cm. In 1845, in Capirendá, Wedell found such vessels with a height of 130 cm. and a maximum diameter of 100 cm. for the wall of the belly.

C 415 126

35. Various Vessels with No Indication Regarding Their Purpose, from the Collection

I. A. 410 (Chirig.). Ht. 14.5 cm. Max. dia. 8 cm. Apert. 5 cm. (Fig. 81b).

I. A. 411 ("). Ht. 13.5 cm. Length 21 cm. (Fig. 81a).

C 415 126

I. A. 397 (Isoseñ). " 16.5 cm. Max. dia. 16.7 cm. Apert. 15 cm. (Fig. 7f).

I. A. 399 (") " 9 cm. " " 13 cm. " 10 cm. (Fig. 70a).

C 415 179

We have no evidence regarding the purpose of these four vessels which are different in form from the other types of vessels. We must regard the small, double vessel I. A. 411 (cf. Fig. 81a /see p.[44]/) as a special result of the mixture of various, but different cultural elements. The way in which the two small dishes are joined to form a double vessel /is/ corresponds to ancient Peruvian models, while the form of the handle, fitted with a ring, is doubtless an addition of European origin. The whole has the form of a salt cellar and was perhaps made to be sold to the whites for this purpose. We must also consider the vessel I. A. 410 (cf. Fig. 81b /see p. 4[illegible]/) as merchandise, while the two vessels I. A. 397 and 399 seem to be manufactured for some use in festivities.

C [439]

Baked Clay Spindle Wheels

C 283 323

The spindle wheels collected among the Chiriguano and Isoseñ are of baked clay or wood, and the Chiriguano also have some spindles with stone wheels. Because I shall deal with spindle wheels in the chapter on spinning, I wish only to

St Schmidt--137 E-S (1930) 1888 SF10 Chiriguano SF10
Chaco SF8
12020

/36 cont./

point out here a difference between the baked clay whorls of the Izozó and those of the Chiriguano with regard to their manufacture. The whorls of the latter are made of pieces of clay from any broken vessel. . by filling them round and perforating them in the center, while the whorls of the Izozó consist of a small disk with different variations in form, also perforated in the center, but made of baked clay especially for that purpose.

Concerning the pottery technique of the Chiriguano and the Chané, we are well instructed by the data given by Nordenskiöld, S. Lizot, Métraux (336), and Campana (337).

336. Nord. I. pp. 364 and 365. S. Lizot: The Technique of South American Ceramics. Göteborg, 1928. Métraux I. pp. 387-388.

337. Campana (Doménico del). "Notizie intorno ai Cirigueni /Information concerning the Chiriguanos/." Archiv per l'antropologia e la etnologia. Florence. Vol. 37 (1907). p. 380.

Especially noteworthy among these is the description of the manufacture of baked clay vessels by the Chané on the Bijuro River, which Nordenskiöld studied in its entire procedure. In the book written by Lizot, entitled The Technique of South American Ceramics, we find, in addition to the systematic arrangement of the observations made by Nordenskiöld among the Chiriguano and Chané, important data on the results of chemical analyses and microscopic observations which Lizot made on the vessels of these Indians. According to this information, the procedure for manufacturing these vessels is the following:

The first condition for the manufacture of baked clay vessels is the availability of suitable clay which has sufficient plasticity so that the vessel can be modelled and fired without being broken. Only a clay with special qualities can meet

Ce Schmidt--148 E-5 (1935) 1938 SFto Chirigano SFto
Chaire SFb
Ezozo

Plate XXIV

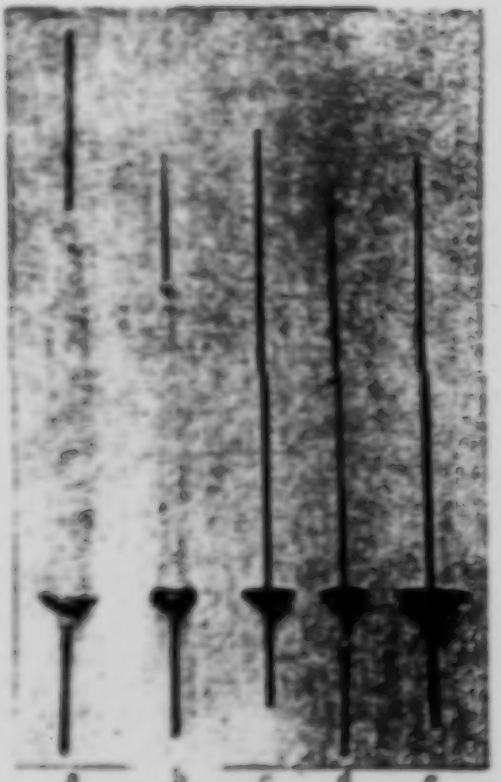

Fig. 85

Fig. 86

The list of cuts are on p. 148./

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C
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Plate XXV

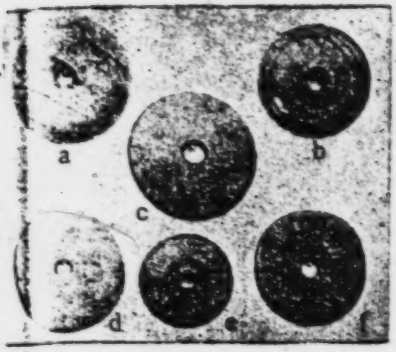

Fig. 87

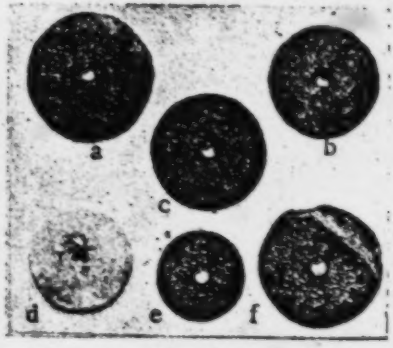

Fig. 88

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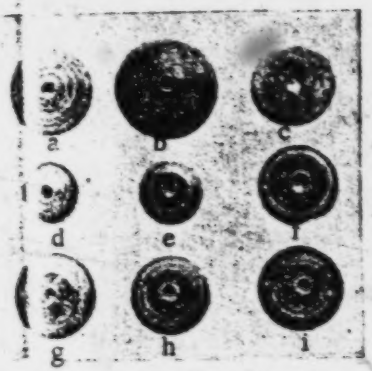

Fig. 89

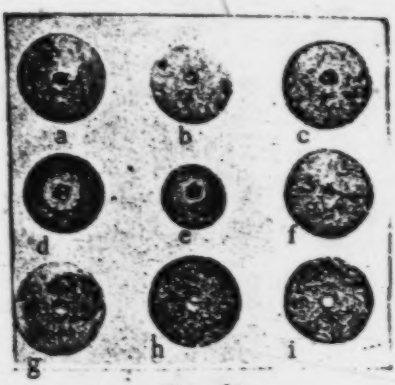

Fig. 90

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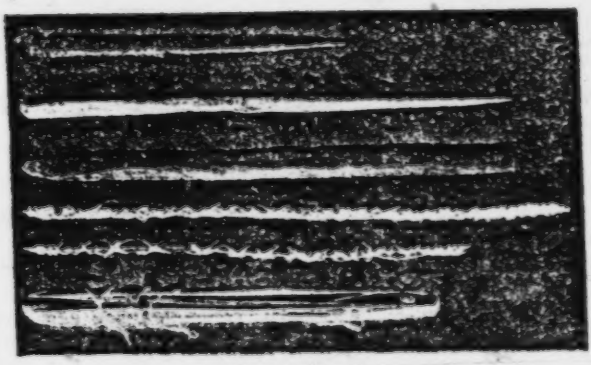

Fig. 91

/The captions are on p. 148./

8: Schmidt--148 E-5 (1935) 1938 SF10 Chiriguano SF10
Chane SF8
Izozo

/Captions for Plates XXIV and XXV./

C Ce 283

Plate XXIV

Fig. 85. Spindles, a-d (Izozó), e Chiriguano): a (I.A. 724), length 51 cm.; b (I.A. 703), length 41 cm.; c (I.A. 716), length 41 cm.; d (I.A. 691), length 40.5 cm.; e (I.A. 475), length 42 cm.

Ce 285 283

Fig. 86. (I.A. 725 a and b) Basket (height 12 cm.), cotton seeds, raw cotton, and a spindle with thread, and a ball of cotton thread (Izozó). b (I.A. 726), ball of cotton thread (Izozó), dia. 8.5 cm.

C 283 322

Plate XXV

Fig. 87. Wooden spindle whorls (Chiriguano): a (I.A. 478), dia. 6 cm.; b (I.A. 474), dia. 5.2 cm.; c (I.A. 480), dia. 6 cm.; d (I.A. 471), dia. 5.3 cm.; e (I.A. 479), dia. 4.3 cm.; f (I.A. 477), dia. 5.2 cm.

C 283 323

Fig. 88. Spindle whorls, a-c of baked clay, e-f of stone (Chiriguano): a (I.A. 486), dia. 6.2 cm.; b (I.A. 487), dia. 5.3 cm.; c (I.A. 483), dia. 5.3 cm.; d (I.A. 481), dia. 4.8 cm.; e (I.A. 482), dia. 4.2 cm.; f (I.A. 484), dia. 5.7 cm.

Ce 283 323

Fig. 89. Baked clay spindle whorls (Izozó): a (I.A. 705), dia. 4.7 cm.; b (I.A. 687), dia. 5.2 cm.; c (I.A. 700), dia. 4 cm.; d (I.A. 702), dia. 3 cm.; e (I.A. 696), dia. 3 cm.; f (I.A. 690), dia. 4 cm.; g (I.A. 692), dia. 4.5 cm.; h (I.A. 689), dia. 4 cm.; i (I.A. 695), dia. 4.2 cm.

Fig. 90. Baked clay spindle whorls (Izozó): a (I.A. 724), dia. 4 cm.; b (I.A. 708), dia. 3.8 cm.; c (I.A. 709), dia. 4.3 cm.; d (I.A. 721), dia. 3.7 cm.; e (I.A. 722), dia. 3.3 cm.; f (I.A. 720), dia. 4.4 cm.; g (I.A. 711), dia. 4.3 cm.; h (I.A. 713), dia. 4.2 cm.; i (I.A. 710), dia. 4 cm.

C Ce 286 413

Fig. 91. Implements for weaving: a (I.A. 500), implement for arranging the warp threads (Chiriguano), length 20.5 cm.; b (I.A. 674), implement for arranging the warp threads (Izozó), length 30 cm.; c (I.A. 673), wooden sword for weaving (Izozó), length 30 cm.; d (I.A. 727), shuttle with cotton thread (Izozó), length 33.3 cm.; e (I.A. 728), shuttle with cotton thread (Izozó), length 27 cm.; (I.A. 513) reel (Chiriguano), length 25 cm.

8: Schmidt--149 E-5 (1935) 1938 SF10 Chiriguano SF10
Chane SF8

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Grinding the Raw Materials

C Ce 252 412 For grinding raw materials, principally for grinding corn, the Chiriguano and Chané use large wooden mortars with long pestles (255). Such a wooden mortar is shown in Figure 15 and

255. Nord. 1, p. 51. Métraux I, p. 365, Fig. 30.

C Ce 412 [191] another one by Nordenskiöld (256). Stone mills are not used by

256. Nord. 1, Fig. 116.

these Indians, although this implement was used, except for the Chaco tribes, by all the tribes whom the Chiriguano had as neighbors after their migration to the west. According to Métraux, a C [515] [388] small stone mill is used only for grinding the seeds of a plant which the Chiriguano use as soap for washing their hair. Such a stone mill is shown in a drawing by Métraux (257).

257. Métraux I, p. 467, Fig. 122.

C 417 191 174 Because the wooden mortar is common even today among the Kainguá /Caingua/, who also belong to the Guaraní linguistic group, and is also mentioned for the ancient Tupinambá /Tupinamba/ of the eastern coast of Brazil, we can assume that the Chiriguano brought this cultural possession from their native land.

C 262 252 412 [191] The fact that mandioca is not important in the economy of these Indians explains why they do not use the wooden grater, the application of which is diffused among so many other Indian tribes of South America who cultivate this nourishing root.

Making Cord and Thread

C Ce 283 The thread that the Chiriguano and Chané make out of wool or cotton is spun by means of the spindle, while that made of caraguata is twisted by hand. We have no information on the way this caraguata thread is twisted.

8: Schmidt--150 E-5 (1935) 1938 SF10 Chiriguano SF10
Chane SF8
Izozo

/57 cont./

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283

The direction in which the threads are twisted by these Indians is generally to the left, while the two skeins which generally make up each thread are usually twisted to the right. See the two sketches shown in Figure 137 /see p.201/. The rather heavy cotton cord stretched out on the loom shown in Figure 104 /see p.176/, used for stretching the warp, is twisted to the right, but it consists of three special threads twisted to the left, which in turn are each made up of two skeins twisted to the right. The strings for the bows for shooting arrows, made of only one skein of animal hide, are twisted to the right. The rule is that all threads, whether they be caraguata threads made by hand or wool or cotton threads made with the spindle, are twisted to the left, made up of two skeins twisted to the right. In examining many threads of the Chiriguano and the Izozó, I found only two exceptions to this rule. Of the two threads wound together on the reel I.A. 413 /I.A. 513 in Fig. 91, p.147/ and each made of two skeins, one is twisted to the right and the other to the left, and the thick wool threads of the warp of the plaited hammock I.A. 448 are twisted to the right, being made of two skeins twisted to the left.

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Thread in the Collection

I.A. 675. Caraguata thread (Izozó).

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I.A. 676. Ball of cotton thread (Izozó). Dia. 9 cm.

I.A. 726. " " " " " " 9.5 cm. (Fig. 86b).

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In addition to the large number of spindles from the Chiriguano and the Izozó, I obtained from these Indians a small basket which contains the raw material needed for spinning cotton thread and a spindle wrapped with cotton thread which is connected to a ball of thread of this material.

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Implements and Raw Material for Spinning, from the Collection

I.A. 725.

a. Basket (Izozó), length 27 cm., height 12 cm., cotton seeds and raw cotton. (Fig. 86a.)

8: Schmidt--151 E-5 (1935) 1938 SF10 Chiriguano SF10

Chane SF8
Izozo

CE 283 323 126 /58 cont./

b. Spindle provided with a whorl of baked clay. Length of the stick 46 cm. Diameter of the whorl 4.2 cm. Ball of cotton thread. (Fig. 86a.)

C 126 283 32

I.A. 470.	Spindle	(Chir.).	Lgth.	44.5 cm.	Wooden whorl,	dia. 4.8 cm.
I.A. 471.	"	"	"	36.5 cm.	" "	5.3 cm.
(Fig. 87d)						
I.A. 472.	"	"	"	39 cm.	" "	6 cm.
I.A. 473.	"	"	"	34.5 cm.	" "	5,7 cm.
I.A. 474.	"	"	"	38 cm.	" "	5.3 cm.
(Fig. 87b)						
I.A. 475.	"	"	"	40.5 cm.	" "	5.8 cm.
(Fig. 85e)						
I.A. 476.	"	"	"	42.7 cm.	" "	6.5 cm.
I.A. 477.	"	"	"	38.5 cm.	" "	5.2 cm.
(Fig. 87f)						
I.A. 478.	"	"	"	42 cm.	" "	6 cm.
(Fig. 87a)						
I.A. 479.	"	"	"	25.5 cm.	" "	4.3 cm.
(Fig. 87e)						
I.A. 480.	"	"	"	32.3 cm.	" "	6 cm.
(Fig. 87c)						
I.A. 481.	"	"	"	40 cm.	Stone whorl	4.8 cm.
(Fig. 88d)						
I.A. 482.	"	"	"	25.5 cm.	" "	4.2 cm.
(Fig. 88e)						
I.A. 483.	"	"	"	37 cm.	Baked clay whorl	5.3 cm.
(Fig. 88c)						
I.A. 484.	"	"	"	42 cm.	Stone whorl	5.7 cm.
(Fig. 88f)						
I.A. 485.	"	"	"	31 cm.	Baked clay whorl	4 cm.
I.A. 486.	"	"	"	35.7 cm.	" "	6.2 cm.
(Fig. 88a)						
I.A. 487	"	"	"	30 cm.	" "	5.3 cm.
(Fig. 88b)						
I.A. 488.	"	"	"	? cm.	" "	5. cm.
I.A. 489.	"	"	"	35.5 cm.	Wooden whorl	5.5 cm.
I.A. 687.	"	Izozó)	"	43 cm.	Wooden whorl	5.2 cm.
(Fig. 89b)						

CE 126 283 322

Ce 126 283 323

/59 cont./

I.A. 711. (Fig. 90g)	Spindle (Izozó).	Lgth.	36.2 cm.	Clay whorl,	dia.	4.3 cm.
I.A. 712.	"	"	"	33.5 cm.	"	"	"	4.2 cm.
I.A. 713. (Fig. 90h)	"	"	"	43.5 cm.	"	"	"	4.2 cm.
I.A. 714.	"	"	"	46 cm.	"	"	"	4 cm.
I.A. 715.	"	"	"	43.5 cm.	"	"	"	3.8 cm.
I.A. 716. (Fig. 85c)	"	"	"	41 cm.	"	"	"	3.8 cm.
I.A. 717.	"	"	"	42.5 cm.	"	"	"	3.5 cm.
I.A. 718.	"	"	"	36 cm.	"	"	"	3.3 cm.
I.A. 719.	"	"	"	36.5 cm.	"	"	"	3.7 cm.
I.A. 720. (Fig. 90f)	"	"	"	41.2 cm.	"	"	"	4.4 cm.
I.A. 721. (Fig. 90d)	"	"	"	34.5 cm.	"	"	"	3.7 cm.
I.A. 722. (Fig. 90e)	"	"	"	38.5 cm.	"	"	"	3.3 cm.
I.A. 723.	"	"	"	40.5 cm.	"	"	"	3.5 cm.
I.A. 724. (Figs. 85a and 90a)	"	"	"	51 cm.	"	"	"	4 cm.

C Ce 283 171

The spindles that I obtained from the Chiriguano and Izozó are the type of spindle, very common among the Indians of South America, that Nordenskiöld calls "Bakairí type" in contrast to the "Bororo type," this nomenclature being based on the first description of these two types of spindles by Carl von den Steinen, who found them among the Bakairí /Bacairi/ on the one hand and among the Bororó on the other (258). In contrast with the

C Ce [113]

258. Carl von den Steinen, Unter den Naturvölkern Zentral-Brasiliens /Among the Primitive Peoples of Central Brazil/, Berlin, 1894, pp. 238 and 488. Nord. 2, p. 196. Otto Frödin and Erland Nordenskiöld, Zwirnen und Spinnen bei Indianern Südamerikas /Twining and

8: Schmidt--154 E-5 (1935) 1938 SF10 Chiriguano SF10
Chane SF8
Izozo

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17
[113]

/59 cont./

Spinning among South American Indians/, Göteborg, 1910.

"Bororo type," the "Bacairí type" of spindle is held in a vertical position when used for spinning and has a small enlargement in the form of a knob at the upper end of the stick. In spinning, the prepared thread winds around the upper piece of the stick. The material of the Chiriguano and Izozó whorls is baked clay (that of the Chiriguano, pieces of broken baked clay vessels, filed), wood, or, rarely, among the Chiriguano, stone.

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From the measurements mentioned above, it seems that the Chiriguano whorls usually have a rather larger diameter than the spindle whorls of the Izozó. The longest stick in the collection (from the Izozó) measures 54.5 cm.; the shortest (from the Chiriguano), 25.5 cm.

As I have already mentioned, all the sticks of the Chiriguano and Izozó spindles are fitted at the upper end with an enlargement in the form of a knob. Most of the spindle sticks in addition have an enlargement in the lower part, directly under the place where the whorl is put, so as to prevent the whorl from coming down the stick when the spindle is in a vertical position. Many spindles have a wrapping of cotton or raw wool directly under the whorl in order to make the whorl secure.

The form of the whorls shows many variations. I have already mentioned that the Chiriguano whorls are generally larger than those of the Izozó. They are also more uniform. The two sides of the baked clay of the Chiriguano are simply flat and smooth, which results from their origin as pieces of broken baked clay vessels to which the Chiriguano give the form of a disk by filing them and which they perforate in the center. The stone whorls of the Chiriguano /60/ and most of the wooden whorls also show the same form. But among the latter there are also some (cf. Fig. 87 /see p. 147/) which are similar to the more complicated forms of the Izozó whorls, although they differ from the latter in their greater size.

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[171]

Among the Izozó whorls only two have two flat sides like the Chiriguano whorls. The other Izozó whorls, not only those of baked clay but also the wooden ones, show great variation in

8: Schmidt--193 E-5 (1935) 1938 SF10 Chiriguano SF10
Chané SF8
Izozo

/73 cont./

The Technique of Making Nets

C Ce 286

The technique of making nets is widespread among the Chiriguano and Chané and is used to make various objects, such as fishnets, hammocks, nets for carrying burdens, bags, and slings. The material used for making these nets generally consists of threads made of caraguata fibers. In the collection there are two Chiriguano burden-carrying nets made of woolen threads and another one made of strips of cowhide.

C Ce [283] [824] E [482]

The common technique of making nets among the Chiriguano and the Chané is the technique called "Knotentechnik," in German, using the knot called the reef knot in English. Figure 138, a and b, shows such a "reef knot," and Figure 142 shows the technique of making nets with this "reef knot." According to Nordenskiöld (275), the Chiriguano and Chané use small

C Ce [284]

275. Nord. 3, p. 207.

rectangular boards for making their nets, like those with which we are familiar from many other tribes of South America. Unfortunately, I did not acquire such a board from the Chiriguano or from the Izozó. By continually wrapping the first board with a thread the simple loops which are shown in the diagram (Figure 142) in the upper row are formed. The thread, after having reached the other end of the board, are wrapped continuously in the opposite direction around a second board, being connected each time, with a knot, with the loops of the thread wrapped around the first board. If the thread has been looped in the manner described, until it gets to the first loop of the first row, the first board can be removed to serve in the formation of the third row of the meshes of the net, which is made in the same way as the second, but in the opposite direction. It is clear that nets made with this technique, in their simplest and least complicated form, must have a rectangular form, and this form is typical of all of the nets of the Chiriguano and Izozó, while various other South American tribes, for example, the Bakairí /Bacairi/, who formerly lived on the tributaries of the Xingú River (in Mato Grosso), make triangular nets.

C Ce [171]

8: Schmidt--194 E-5 (1935) 1938 SF 0 Chiriguano SF10
Chané SF8
Izozo

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Ce 286 352 126

Nets of the Collection That Are Made with the Technique Called "Knotentechnik" in German, Using the Knot Called Reef Knot in English

I.A. 360. Hammock (276) (Chané of the Parapití). Caraguata.

276. Gift of Mr. Teodoro Rojas.

Length 3.20 m. (Fig. 102c.)

I.A. 766. Hammock (Izozó). Caraguata. Length 1.80 m.

C I.A. 794. " " " " 2.70 m.

Ce 286 415 482 126 I.A. 446. Net for carrying loads (Chiriguano). Wool. Lgth 1.05 m.

I.A. 447. " " " " " " " 0.75 m.

I.A. 561-564, 567, 569-571. Nets for carrying loads (Chiriguano). Caraguata. Length between 1.50 and 0.50 m. (I.A. 567, Figs. 134 and 143; I.A. 568, Fig. 144.)

I.A. 767-787; 790-792. Nets for carrying loads (Izozó). Caraguata. Length 1.60 m. and 0.65 m. (I.A. 768, Figs. 133 and 142; I.A. 772, Fig. 135.)

Ce 415 286 126 I.A. 785. Bag (Izozó). Caraguata. Length 0.82 m. Height 0.48 m.

I.A. 788 " " " " 0.62 m. " 0.62 m. (Fig. 136.)

I.A. 793. Quadrangular net (Izozó). Caraguata. Length 0.90 m.

Ce [227] I.A. 764. Implement for fishing with net (Izozó). Length 73.5 cm. (Fig. 39.)

I.A. 795-801. Nets for implements such as I.A. 764 (Izozó). Caraguata.

C 411 286 I.A. 508. Sling (Chiriguano). Caraguata. Length 15 cm.

I.A. 509. " " " " 14 cm.

C Ce 286 352 227 136 From the large size of the mesh of nets I.A. 360, 766, and 794, it follows that they are hammocks. Because in Chiriguano and Chané territory there are generally no fish except small ones, nets for fishing must have considerably smaller meshes.

C Ce 415 286 482 Of the Chiriguano nets for carrying loads, two are made of wool and one of these has a band like most such nets from the Izozó. The rest of these nets from the Chiriguano and the Izozó are made of caraguata thread. Some of them haye a rather small mesh, but among those of the Izozó those with big mesh are the rule.

[283]